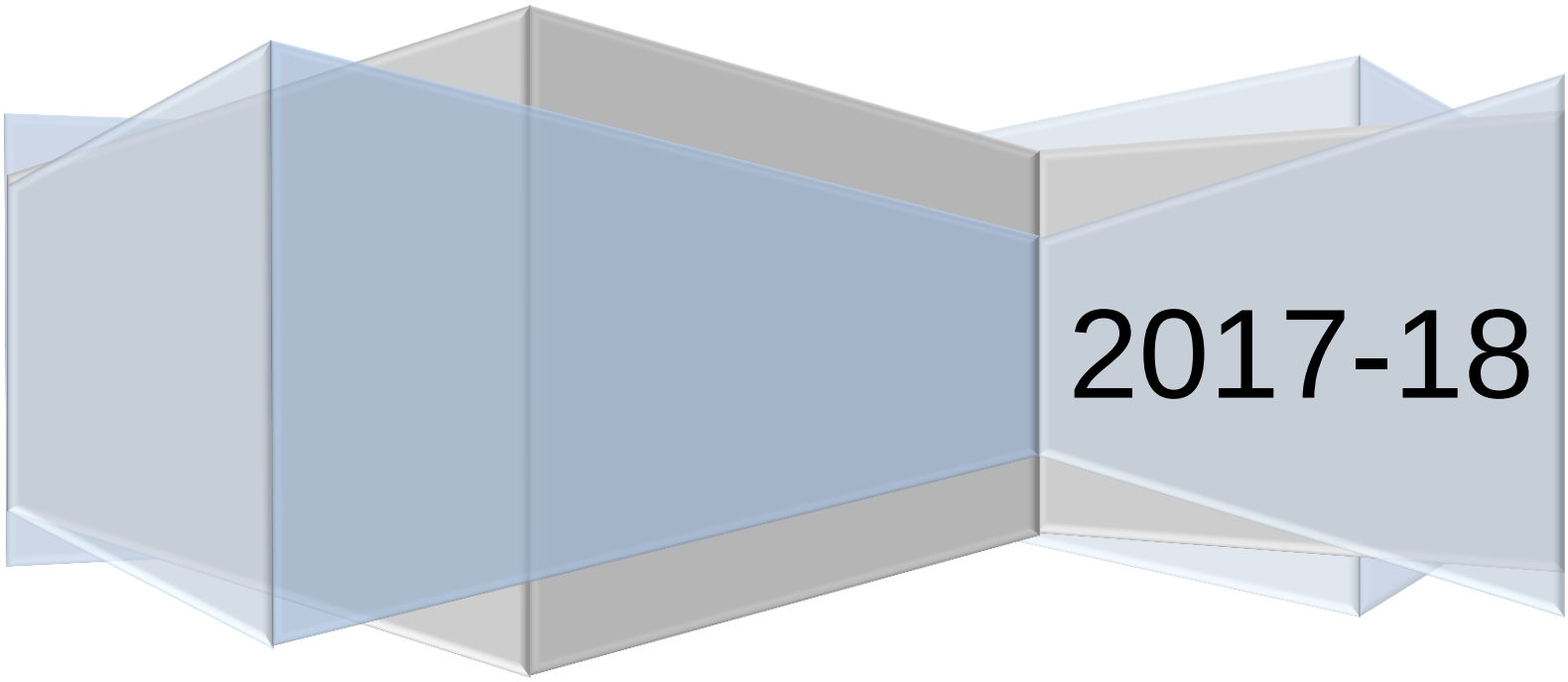
School of Computing, Engineering and Intelligent Systems

EEE521 Final Year Project Handbook

Guidelines for the Submission of Projects in Final Year

Mairin Nicell
(material courtesy of Mr Martin Doherty)



Contents

1. Introduction

This handbook provides guidelines for students taking the module EEE521 Final Year Project. It offers guidance and information on all aspects of EEE521 to help make your project a success. Before beginning the project it is important you familiarise yourself with the Module Specification, included in Appendix 1. Read through its contents so that you are aware of the learning outcomes for the module and what you are expected to complete and submit.

In particular, these guidelines describe how your project will progress throughout the final year, and give advice on the structure and content of the reports required, and explains how your work will be assessed.

The Final Year Project is very important to you and your course because:

- It represents a capstone project for your studies and an essential element of your employability portfolio. Many employers will look at your final year project for a measure of your technical and knowledge competencies.
- It is an individual piece of work, so you can control the quality and quantity of the results produced.
- It demonstrates the knowledge and skills that you have acquired on the course so far.
- It demonstrates your ability to produce high quality reports.
- It gives you a chance to improve/extend your knowledge and skills in a range of technical and professional areas.
- It demonstrates your organisational ability, especially in planning and managing your time.
- It demonstrates that you have the ability to produce a suitable computing solution to a realistic problem.
- It forms and essential part of professional accreditation for bodies such as the British Computer Society, the Institute of Mechanical Engineers (IMechE) and the Institution of Engineering and Technology (IET) (Appendix 2).

2. Assessment Schedule

The Final Year Project is assessed as follows:

- Semester 1: Students submit their Interim Report for formative feedback
- Semester 2: Students submit their Final Report and attend a Viva/Demo

The proposed Assessment Schedule for 2017-18 is: **(Subject to change)**

Semester One

Week 1	Students complete and sign a Project Proposal Form and have it agreed and signed by the Project Supervisor. The Student submits the form to the Project Supervisor, who meets with the Second Marker to finalise and sign off the form. The Project Supervisor submits one copy to the School Office MS013 for the attention of the Project Coordinator, Mairin Nicell, by **4pm** on **Friday 29th September 2017**. The Project Supervisor must ensure details of the project have been entered into the Faculty Ethics Database and it meets the Professional Body Guidelines.
Week 9	In accordance with the Interim Report Submission Guidelines, Appendix 7 of the handbook, an electronic copy of the report must be submitted to Blackboard Learn by **12 noon on Friday 24th November 2017**. Written formative feedback will be returned to the student in Week 13 via Blackboard Learn.

Semester Two

Week 12	In accordance with the Final Report Submission Guidelines, Appendix 9 of the handbook, two spiral-bound copies of the report must be signed in to the School Office **MS013 on Thursday 3rd May 2018, by 4pm sharp. Late submissions will not be accepted.** A copy of the final report must be submitted to Blackboard Learn by 6pm on **Thursday 3rd May 2018. Only one submission is allowed.**
Viva and Demo Schedule	Following the Examination Period, week beginning **Monday 28th May 2018**, you will take part in the Viva and Demonstration. Exact dates and times will be published in Semester 2. Guidance can be found in Section 9.2 of this handbook.

3. Project Roles and Responsibilities

You are in charge of your project and you lead the way! You must take ownership of the project from the beginning. This is your own work and the culmination of your degree.

There are a few deadlines that have been set for you but the detailed plan and implementation are your responsibility.

Various academic staff provide support:

- Project Coordinator (Mairin Nicell): The Project Coordinator has overall management responsibility for organising and managing the projects; allocations, submissions and vivas.
- Courses' Coordinator (Mairin Nicell): The Courses' Coordinator handles any EC1 issues which may arise.
- Project Supervisor: The Project Supervisor helps guide your project and contributes to its assessment.
- Second Marker: A second academic member of staff is assigned to each project to mark each element independently of the supervisor.

4. Project Supervisors and Topics

For EEE521 Final Year Project each student is allocated a Project Supervisor, who is a member of academic staff. Each supervisor has provided a list of suggested topics for projects which he/she is happy to supervise. This list can be found in the BBL area for EEE521 Final Year Projects and in the Final Year Projects section of the Course Support Area.

Supervisors are also willing to discuss and advise students on any projects they suggest themselves. Students are often suggested a topic by their placement supervisor relating to their work experience. This must be carefully examined to ensure that the suggested work matches the module specification. The student should not produce a working solution to meet the workplace requirements only; it must meet the module requirements in the first instance. If you wish to define your own project you should write a short outline, up to a page, and email it to your Project Supervisor prior to arranging a meeting to discuss topics.

5. Allocation of Project Supervisor

To improve the final year student experience and to get students started early on their final year projects we have changed the arrangements for allocating project supervisors.

Project allocation is made to suit both students and supervisors in relation to their specific courses. Students have been allocated to an academic member of staff who has expertise in a particular subject area as far as possible; Computer Science, Computer Engineering, Computer Games, Information Technologies or Engineering.

The allocation for the current academic year can be found in the Course Support Area, under the Final Year Projects section. This list is also available in the BBL area for EEE521.

Your supervisor will make contact with you to discuss project topics so that a suitable project can be planned and agreed before the beginning of your final year. You should make every effort to engage with your supervisor as early as possible in advance of starting final year. Ideally you should have identified and agreed a project topic with your supervisor in advance of registering for final year.

The aim is to have the Project Proposal Form (Appendix 3) completed, agreed and signed off by your Project Supervisor and Second Marker in Week One of the first semester, with work ready to start immediately.

Some examples of areas for research and possible projects are available on the project page for each supervisor. These are not prescriptive and there is scope for discussing other project topics with your supervisor.

6. Project Proposal Form

The next step is the Project Proposal Form (Appendix 3). This form is a one page document which identifies the Project Title, the general field of study and provides a brief description of the project. It lists potential hardware, software, engineering apparatus requirements as well as identifying the project deliverables.

The form allows for any risk/health and safety issues to be identified at this early stage. It is recommended that you discuss any potential risks/health and safety issues with you supervisor at the outset to identify anything that might affect the success of the project and consider ways of removing or reducing such threats. The University requires a risk assessment be completed for all projects. Typically, computing projects will have nothing more than the standard risks related to using a computer and monitor. However some engineering projects may involve the use of electrical equipment or work in an environment containing hazards. All such risks should be identified, indicating how they will be managed. Managing such risks is a

way of reducing potential problems that could affect the success of your project or the quality of what is produced.

Engineering students need to complete the Health and Safety Risk Assessment Form (Appendix 3) and confirm that this has been done.

The Project Proposal Form also checks that the project details have been entered by the supervisor into the Faculty Ethics database. There is a University requirement that any research which makes use of human subjects must obtain ethical approval in advance. This includes techniques as simple as using a group of students to evaluate your project prototype. You should discuss ethical approval with your supervisor. For projects that just require the use of questionnaires, using non-vulnerable adult subjects such as fellow students, there is a stream-lined approval process.

The supervisor must also ensure that the project complies with the accreditation requirements of the professional body.
The form must be signed by the student, the Project Supervisor and the Second Marker.

At the end of Week One the Project Supervisor submits the Proposal form to the Project Coordinator.

7. Weekly Journal

Students are expected to maintain a journal for the duration of the project. To do this you will be using the Journal Tool in the BBL area for EEE521 Final Year Project.

This journal provides a record of your project progress and the learning experience you are having. It will be a valuable resource for you in the preparation of your Final Report, in particular, the Evaluation and Reflection chapter.

In advance of your scheduled meeting with your Supervisor, submit a **weekly entry** which outlines the following:

- What you have worked on since the last meeting
- What issues you had and how these were resolved/will be resolved
- What you plan to do for the next meeting

During each meeting, your Supervisor will update the **Comment** section of each journal entry, to indicate what was discussed during the meeting, and what you have both agreed for the next one.
If you fail to maintain an accurate journal, this reflects poorly on your engagement with the module and the course.

The journal entries may be of any length and each one will be unique to you and your project. They will only be read by your Project Supervisor and the Project Co-ordinator (if necessary).

8. Project Supervision and Feedback

Students are expected to maintain weekly contact with their Project Supervisor, in the form of face-to-face meetings for a maximum of 30 minutes, usually in the Supervisor's office. You should use this meeting to acquire feedback, guidance and direction on any work you have produced or technical issues you may be experiencing. Meetings should be arranged at a set time suitable to both and this arrangement should be maintained throughout the academic year.

Students can expect to receive **one** formal cycle of feedback from their Project Supervisor on the written work they produce during Semester One. The weekly meeting may be used to give more informal feedback to the student if time permits.

9. Assessment

The report will be completed in two sections:

- Interim Report (IR)
- Final Report (FR)

It should be pointed out at this stage that the IR and FR together should be no more than **50 pages** excluding appendices and references.

Each subject area within the School has created a **report template** for students to use which includes indicative content for each section. These templates are found in the EEE521 area of BBL. Students are advised to read each section carefully and to note the details provided.

9.1. Interim Report

During semester one, students are expected to write the IR and to submit an electronic copy to the EEE521 Blackboard Learn area in **Week 9, Friday 24th November 2017**. The IR represents approximately 35% of the FR and producing a high quality draft at this stage is important for your overall performance in the module.
You need to be aware of the Criteria for Honours Classification for Final Year Projects in Appendix 4, and the Assessment Criteria in Appendix 11 as these will be used to assess your overall project. The Criteria for Honours Classification for Final Year Projects have been developed and agreed by those staff members who will be marking your project. During semester one the student can submit multiple copies of

their report to Blackboard Learn and the report will not go into its repository. This will not be the case with the final submission in semester two.

Failure to submit the IR without extenuating circumstances will result in a penalty being applied to your final report mark (final report weighted by 0.65).

At this milestone you will be assessed formatively on the following:

- Introduction
- Analysis
- Layout, Structure and Presentation

You will find the Interim Report Formative Feedback Form in Appendix 6 and the guidelines for the submission of the IR are outlined in detail in Appendix 7.

Formative Feedback will be returned to each student during Week 13, which will take the form of qualitative comments and the predicted classification for the project at that point in time, agreed by the Supervisor and Second Marker. These comments **MUST** be acted upon to improve your final report submission.

9.2. Final Report

Semester two is when you will make most progress on your project, and it is during this semester that the plans to develop and test the work outlined in the IR take place. Students are still expected to maintain the weekly journal and weekly contact with their Project Supervisor.

The Final Report Feedback Form can be found in the in Appendix 8a and 8b. The breakdown of marks is as follows:

- Introduction (15)
- Analysis (20)
- Design (20)
- Implementation and Testing (35)
- Evaluation and Reflection (10)

The final mark will be weighted out of **70%** for the written report. The other **30%** is allocated to the Viva and Demonstration.

The deadline to submit the Final Report is Week 12. Two spiral bound copies should be submitted to the School Office (MS013) and the final version of the report submitted to Blackboard Learn. At this stage you can only submit the report **once** and it will be retained in the TurnItIn repository.

9.3. Viva and Demonstration

At the Viva the student will present and demonstrate his/her work. The Viva Panel will consist of the Project Supervisor and the Second Marker.

The Viva and Demo Feedback Form is provided in Appendix 10.

A Viva Timetable will outline the day/time/location when the viva will take place. Each one lasts approximately 30 minutes.

If possible please set up your prototype on a PC in your allocated viva room prior to the day of your viva. A lab PC will be set up in both MS020 and MG132. It is ok to use your own laptop or PC for your demonstration. If you do so ensure in advance that you have all the necessary adapters and leads to connect your laptop to the projector.

The viva will proceed as follows:

- The student gives a 5 minute elevator pitch outlining the project in a succinct way. Your supervisor will stop you if you exceed the time limit.
- 25 minutes will be dedicated to a demonstration of the project and a question and answer session. You must convince the examiners that you have a sound understanding of the issues and be able to illustrate how problems were overcome.
- The student will then leave the room and the Project Supervisor and Second Marker have time to complete the necessary paperwork. A final mark is given to each project at the end of the Viva.

This completes the assessment of EEE521 Final Year Project.

Appendix 1: EEE521 Module Specification

MODULE TITLE:	Final Year Project	
MODULE CODE:	EEE521	
YEAR OF REVISION:	2013/14	
MODULE LEVEL:	6	
CREDIT POINTS:	30	
MODULE STATUS:	Compulsory	
SEMESTER:	1 and 2	
LOCATION:	Magee	
E-LEARNING:	Blended Learning	
PREREQUISITE(S):	None	
CO-REQUISITE(S):	None	
MODULE CO-ORDINATOR(S):	Nicell, M.A	
TEACHING STAFF RESPONSIBLE FOR MODULE DELIVERY:	All members of academic staff	
HOURS:	Lectures	4 hours
	Tutorials	24 hours
	Practicals	0 hours
	Independent study (including assessment)	272 hours
TOTAL EFFORT HOURS:	300 hours	
ACADEMIC SUBJECT:	COM	
MODULAR SUBJECT:	N/A	

RATIONALE

Students are required to undertake an individual project during the final year of the course. Its purpose is to provide an experience of developing a computing/engineering solution to a realistic problem. This work combines skills and knowledge acquired previously on the course with those acquired during the project. In particular, students will have an opportunity to (i) strengthen their competence in project management, in taking an initial concept through to a successful implementation; and (ii) enhance their communication skills, in producing a dissertation and defending the work.

AIMS

The aims of the module are:

- To provide each student with the experience of developing a software/hardware/engineering solution to a realistic problem, taking the solution from initial conception through to successful delivery.
- To provide each student with the experience of carrying out a programme of work within the framework of a management schedule.
- To provide an opportunity to apply skills and knowledge acquired earlier in the course.
- To provide an opportunity to enhance generic computing/electronic/engineering skills—in particular, an ability to identify requirements, design and implement a solution based on those requirements, and test and evaluate the resulting solution appropriately.
- To provide an opportunity for students to enhance their personal skills, especially an ability to work independently, plan and organise time appropriately, and critically evaluate both the prototype produced and the process through which it is created.
- To encourage the development of deeper knowledge and skills in the selected area of study.

LEARNING OUTCOMES

A successful student will be able to:

KNOWLEDGE AND UNDERSTANDING

K1 Demonstrate knowledge and understanding of the application of appropriate project management methods, tools and techniques for a computing/engineering project.

K2 Demonstrate knowledge and understanding of the subject area of the project, including familiarity with relevant computing/engineering technology.

K3 Appreciate the professional, legal, moral and ethical issues involved in the development and deployment of a computing/engineering solution.

INTELLECTUAL QUALITIES

I1 Demonstrate an ability to analyse project requirements and assemble a detailed requirements specification.

I2 Demonstrate an ability to devise an initial system design, project approach or prototype.

I3 Demonstrate an ability to test the implementation of the design specification / algorithm to identify defects and to assess system behaviour against the original specification.

PROFESSIONAL/PRACTICAL SKILLS

P1 Conduct and present in writing an in-depth analysis of the project topic.

P2 Present aims, objectives and a programme of work for his/her selected project topic.

P3 Assemble a detailed requirements specification.

P4 Implement a software system/engineering solution based on the project requirements and design specification.

TRANSFERABLE SKILLS

T1 Communicate effectively using various media and for a variety of audiences.

T2 Organise personal time in an efficient and effective manner.

T3 Organise personal development in an efficient and effective manner.

CONTENT

The student will undertake project specific study and investigation. Content will vary from project to project but will typically involve the analysis of a software/hardware/engineering related problem, followed by the design, implementation, testing and evaluation of an appropriate software/engineering solution.

The Project Supervisor will be responsible for guiding directed reading material, for guiding the technical direction of the project, and for monitoring student progress with respect to the overall project schedule.

Students will make use of the various hardware/software/engineering resources available within the university and, by prior arrangement, with industrial partners.

TEACHING AND LEARNING METHODS

Each student will be allocated a project supervisor, responsible for guiding the student on the technical direction of the project, and for monitoring progress with respect to the overall project schedule in weekly tutorial meetings. The supervisor's role is one of verifying, encouraging and counselling rather than precise directing.

Students will be directed to read the Project Handbook, which provides a detailed explanation of all aspects of the project and its assessment.

Students will be expected to:

- work consistently throughout the project and meet regularly with their supervisor
- make use of the various hardware/software/engineering resources available within the University and, by prior arrangement, with industrial partners

The module is offered by Blended Learning.

ASSESSMENT AND FEEDBACK

This module has 2 essential assessment components:

1. An Interim Report (35% of the overall coursework mark)
2. A Final Report (65% of the overall coursework mark). This is broken down into two assessment components: the report (70%) and a demonstration/oral examination (30%).

An End of Semester 1 Report is submitted, addressing issues such as:

- Project aims, objectives and plan;
- Investigation, literature review and assessment of the problem;
- Requirements analysis and specification;
- Initial design approach / proposed implementation strategy.

Semester 1's report is assessed and feedback given with respect to the following skills:

- Critical and evaluative skills
- Management and planning skills

The sources of evidence for assessing these skills will include:

- End of Semester Report
- Project Supervisor's and Second Marker's comments.

An End of Semester 2 Report is submitted in Week 12 addressing issues such as:

- The delivered software/engineering prototype;
- Project documentation;
- Software/engineering demonstration and oral examination;
- Project Supervisor's and Second Marker's comments.

Semester 2 is assessed with respect to the following skills:

- Software/engineering development skills
- Evaluation and testing skills
- Communication skills
- Management skills

Continuous formative feedback is given at weekly meetings as the student develops his/her solution. Summative feedback is provided at the end of both Semester 1 and Semester 2.

100% Coursework 0% Examination

READING LIST

Required:

Project Handbook

Recommended:

Relevant to each project, as directed by the project supervisor

Selected websites as directed

Berkun, S., (2005) *Art of Project Management*, Cambridge, MA: O'Reilly Media.

Dawson, C.W., (2005) *Projects in Computing and Information Systems: A Student's Guide*, Harlow, Addison-Wesley.

SUMMARY DESCRIPTION

Students are required to undertake an individual project during the final year of the course. Its purpose is to provide an experience of developing a software/hardware/engineering solution to a realistic problem. This work combines skills and knowledge acquired previously on the course with those acquired during the project. In particular, students will have an opportunity to (i) strengthen their competence in project management, in taking an initial concept through to a successful implementation; and (ii) enhance their communication skills, in producing a dissertation and defending the work.

Appendix 2: Professional Body Accreditation

The course you are studying has been given professional accreditation by the relevant professional body. Computing courses are accredited by the British Computer Society (BCS). The BCS specifies what Computing courses need to contain to obtain accreditation for graduates (BCS, 2012). The accreditation requirements for computing courses state that the course must include a student project that must be "an individual activity, giving them the opportunity to demonstrate

- Their ability to apply practical and analytical skills present in the programme as a whole.
- Innovation and/or creativity
- Synthesis of information, ideas and practice to provide a quality solution
- That their project meets a real need in a wider context
- The ability to self-manage a significant piece of work

Critical self-evaluation of the process". (BCS, 2012)

An extract from: BCS Guidelines on course accreditation
Information for universities and colleges
September 2010, updated 2012, p14-15.

2.5 Projects

2.5.1 General project requirements

An individual project is an expectation within undergraduate, integrated masters, and postgraduate masters programmes. Students must be provided with written guidance on all aspects of the project, including selection, conduct, supervision, milestones, format of the report and the criteria for assessment.

All projects should reflect the aims and learning outcomes which characterise the programme to which they contribute as set out in the programme specification.
Project reports

Projects must involve the production of a report which should include:

- elucidation of the problem and the objectives of the project
- an in-depth investigation of the context and literature, and where appropriate, other similar products (this section is likely to be emphasised less for an IEng project)
- where appropriate, a clear description of the stages of the life cycle undertaken

- where appropriate, a description of how verification and validation were applied at these stages
- where appropriate, a description of the use of tools to support the development process
- a critical appraisal of the project, indicating the rationale for any design/implementation decisions, lessons learnt during the course of the project, and evaluation (with hindsight) of the project outcome and the process of its production (including a review of the plan and any deviations from it)
- a description of any research hypothesis
- in the event that the individual work is part of a group enterprise, a clear indication of the part played by the author in achieving the goals of the project and its effectiveness
- References

2.5.2 Undergraduate individual project requirements

It is expected that within an undergraduate programme, students will undertake a major computing project, normally in their final year and normally as an individual activity, giving them the opportunity to demonstrate:

- their ability to apply practical and analytical skills present in the programme as a whole
- innovation and/or creativity
- synthesis of information, ideas and practices to provide a quality solution together with an evaluation of that solution
- that their project meets a real need in a wider context
- the ability to self-manage a significant piece of work
- critical self-evaluation of the process

For accreditation for CITP, CEng or CSci, the individual project should be worth at least 30 credit points at level 6 or above. The project must be passed without compensation.

Engineering courses receive accreditation from the Institute of Mechanical Engineers (IMechE) and the Institution of Engineering and Technology (IET). Broadly both institutions indicate that “All degrees accredited by the IMechE/IET include an individual project. This may be a “linked” exercise but individual input is essential and must be clearly identifiable as such and assessable independently. The project should form a major part of the final year of a degree and contribute between 15 and 25% of the available marks for the final year. The project should be of a technical nature and support the engineering orientation of the degree as a whole. It should not simply be a computer exercise, a non-technical assignment or a review (although a review will normally be part of the project). Although some projects may not contain all the following elements, the ideal project should involve:

- Reference to any relevant previous work
- Appropriate analysis
- Appropriate design
- Manufacture (if practical)
- Testing and interpretation of results
- Preparation of a final report including costing aspects and clear recommendations.”

Appendix 3: Project Proposal Form

PROJECT PROPOSAL FORM

Supervisor Name:

Student Name: Student # Course:

Project Title:

Field of Computing and Intelligent Systems in which project resides:

Project Aims:

Project Description (Max. 100 words):

Software / Hardware / Engineering Apparatus Required:

Project Deliverables:

Are there any risk factors/health and safety issues? Yes ☐ No ☐
Has the project been submitted to the Faculty's Ethical Database?

Computing Projects - Please confirm (✔) that the proposal satisfies the BCS requirements for (2.5.1) "General project requirements" and (2.5.2) "Undergraduate individual project requirements". ( )

Engineering Projects - Please confirm (✔) that the Health and Safety Risk Assessment for Undergraduate projects is complete. ( )

Supervisor Date
Moderator, 2nd Marker
Student

EXAMPLE-1

Project Proposal Form

Supervisor Name:
Dr. B. Gates

Student Name:	Student #	Course
A.N. Other	9900701	E160UM

Project Title:
On-line Banking System

Field of Computing and Intelligent Systems in which project resides:
Client-Server, Distributed Objects, communications

Project Aims:
To provide a platform and location independent on-line banking system.

Project Description (Max. 100 words):
To provide a platform and location independent client server on-line banking system. The client interface will be a web based Java applet, and using CORBA, will connect and retrieve specified information from a server-side bank database.

Hardware and Software Required:
2 PC's (one server, one client), Internet Connection.
Sun JDK, OrbixWeb/VisiBroker ORB's, RationalRose, IE/Netscape, MS Access.

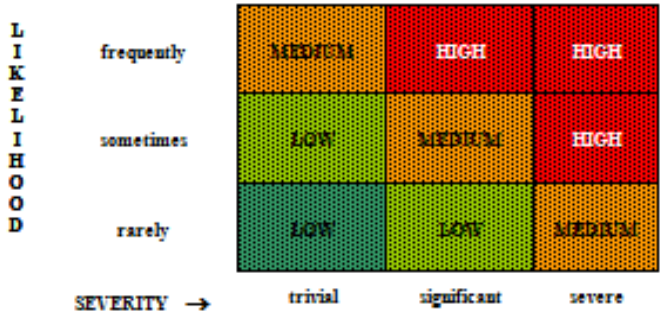
Project Deliverables:
demonstration software: GUI - Java applet, MiddleWare - CORBA, Server - Database
Project Report
Are there any risk factors/health and safety issues? No

Has the project been submitted to the Faculty's Ethical Database? Yes
Does the project comply with the British Computer Society's requirements? Yes
Please confirm (✔) that the proposal satisfies the BCS requirements for (2.5.1) "General project requirements" and (2.5.2) "Undergraduate individual project requirements"? (✔)

Health and Safety Risk Assessment– general hazards to staff 03/07

Work activity assessed Date:_____	**Faculty/School/Department reference** _____

Person(s) affected Staff Students Others **Numbers affected** _____	
Activity frequency Daily Weekly Other	
Campus (please tick) **J C M B**	
Room ref (if relevant)	
Review due	



Individual Tasks	Hazards	Controls required	In place Yes √ No ×	Risk rating (use matrix)	IMPLEMENTING THE CONTROLS	
					Action by whom?	Action by when?

This risk assessment will be reviewed at least annually where any significant changes are made, new equipment introduced or if there is any reason to suspect it is no longer valid.

Health and Safety Risk Assessment– general hazards to staff 03/07

Task Hazard Prompt

1. Falls or Falling Objects ☐
2. Manual Handling ☐
3. Portable Hand Tools ☐
4. Machinery/Plant ☐
5. Vehicles ☐
6. Fires ☐
7. Explosions ☐
8. Chemicals / Dusts ☐
9. Biological Agents ☐
10. Drowning (Near open water) ☐
11. Radiation ☐
12. Electricity ☐
13. Pressure Systems ☐
14. Thermal Environment ☐
15. Noise and Vibration ☐
16. Display Screen Equipment ☐
17. Hazardous Waste ☐
18. Lone Working ☐
19. Field Trips ☐
20. Entry into Confined Spaces ☐
21. Sharps Injuries ☐
22. The Working Environment ☐
23. Welding ☐
24. Violence ☐
25. Sports Injuries ☐
26. Foreign Travel ☐
27. Working at Heights ☐
28. Others (Not Listed) ☐

Assessor's Comments

Faculty/School/Department/Research Institute _____

Signature of assessor _____ Print name _____ **Designation** _____

Management Comments

Manager/supervisor _____ Print name _____ **Designation** _____

Risk assessment communicated to: Technicians ☐ Academic/supervisor ☐ Students ☐ PRD ☐ Others _____

Appendix 4: Criteria for Honours Classification for Final Year Projects

1st (80 - 100): Outstanding:
Here the candidate must demonstrate outstanding ability across ALL aspects of the project, in terms of background research, the project report, software/hardware/engineering implementation, oral presentation and project management. There must be evidence of originality and insight, and clearly supported by an extremely high level of innovation, initiative, motivation and independent work. The work must be at a level which shows clearly that the student has the ability to pursue doctoral research and the work itself is capable of publication as it is.

The project must be complete with all of the project requirements outlined in the report implemented with further additions over and above, showing an outstanding level of detail, a significant amount of analysis or assessment of results, and an outcome which could be commercialised.

The student must use novel and appropriate technologies, and he/she must have shown a high level of expertise in the use of the tools. The student must display an outstanding understanding of the technical components of the project.

The student must have gone above and beyond the supervisor's expectations and impressed the examiners by providing original contributions to the project. The student must have an outstanding understanding of the relevance of the project within industry or research.

The oral presentation must demonstrate that the student is highly articulate and clearly knowledgeable of the subject. The student is able to 'think on their feet' and is confident in doing so.

The report has been written demonstrating an exceptional level of writing style and is perfect in terms of its adherence to the template, layout and presentation with no errors of any kind.

1st (70 - 80): Excellent:
Here the candidate must demonstrate clear excellence across ALL aspects of the project, in terms of background research, the project report, software/hardware/engineering implementation, oral presentation and project management. There must be evidence of innovation and creativity clearly supported

by a high level of initiative, motivation and independent work. The work must be at a level which shows clearly that the student has the ability to pursue doctoral research.

The project must be complete with all of the project requirements outlined in the report implemented to produce an excellent solution. The student must use novel and appropriate technologies, and he/she must have shown expertise in the use of the tools. The student must display an excellent understanding of the technical components of the project. The student must have impressed the examiners by providing some original contributions to the project and a wide range of complexity. The student must have an understanding of the relevance of the project within industry or research.

The oral presentation must demonstrate that the student is articulate and very well-rehearsed without the need to read from notes. The student provided knowledgeable answers to the questions and is able to 'think on their feet'.

The report has been written demonstrating an excellent writing style and is perfect in terms of its adherence to the template, layout and presentation with only minor errors found in the document.

2:1 (60 - 69): Good:
To achieve this level there must be significant evidence of wide-ranging and deep study in relevant material and texts. This must be placed in its wider academic and research context. There must be an imaginative approach, a balanced treatment of possibilities and comprehensive thinking.

The project must be basically complete with all of the project requirements outlined in the report implemented and no bugs/errors found during the demo. The student must use appropriate technology and show competence in the use of the tools.

All or most of the project report, software/hardware/engineering implementation and project management are considered good with some parts excellent although there will likely be a lack of originality or innovative flair. The project may not have been thoroughly tested or evaluated.

The student has given a good oral presentation, but used notes to remain on track and provided good, sound answers to the questions.

The report has been written demonstrating a good writing style although there are aspects where improvements could be made. For example the report adheres to the template, but there are some presentational errors found in the document.

2:2 (50 - 59): Satisfactory:
At this level the candidate has performed a study of the given project but there is a lack in-depth work and subject knowledge. All or most of the project report, software/hardware/engineering implementation, oral presentation and project management are considered adequate although some are not covered in depth. The student attempted to use appropriate technology and has shown some competence in the use of the tools, but the project is incomplete with a number of deficiencies.

There are a number of flaws in the software/hardware/engineering implementation and inadequate coverage of the original specification. The project fails to address many of the appropriate concerns, is unambitious, and lacks any analysis of the domain.

The student has given an adequate oral presentation, but read extensively from notes. The answers to the questions were appropriate.

The report is adequate although the writing style may be unclear in places. The report adheres to the template, but there are a number of presentational and other errors found in the document.

3rd (40 - 49): Adequate:
At this level there is a reasonable attempt to complete a project but overall it falls below minimum standards, either in the academic report or the practical solution. Academically this could mean a missing chapter in the report, and practically, failing to translate a hardware/software/engineering design into an effective implementation.

There should be evidence of competence in practical areas indicating that the student can use relevant software/hardware/engineering technologies, but there are shortcomings in the work.

The student followed only what the supervisor told him/her to do. The project is very incomplete with only a small number of the project requirements outlined in the report implemented and numerous problems remain. The student has a limited ability, limited understanding of the different components of the project and limited knowledge of the subject. The work is considered redeemable with a reasonable amount of effort.

The student read extensively from notes during the presentation and showed a lack of knowledge in the answers given to questions.

The report is basic showing a basic knowledge and understanding of the subject. It does not adhere to the template, and there are a number of presentational and other errors found in the document.

Fail (0 - 39):
Here the student has completely failed to achieve a level of performance in one or more areas to the extent where the work is considered irredeemable. The project area is insufficiently understood, the results untenable, or the written and/or oral presentation of the work is completely flawed. There may be no software or hardware demonstration. There may have been a complete lack of background research, leading to a serious lack of understanding of the requirements or methodology appropriate to the topic under consideration.

All or most of the project report, software/hardware demonstration and oral presentation and project management are inadequate. The supervisor might have found the candidate not attending regular meetings or only providing work towards the end of the project rather than consistently throughout the period.

Appendix 5: Assessment Approach: 6Cs

(A variant of the 5Cs from Oxford CS)

- **Context:** Does the work show a good appreciation of the context to the work? Does it demonstrate suitable motivation, relevant background research, and knowledge of state of the art with appropriate references?

- **Clarity:** Does the work set out a clear set of aims and objectives (i.e., requirements)? Is the work presented in a way that is readable and clear for the non-specialist, but with appropriate level of detail for the degree being pursued? Does the work set out a clear set of requirements or is there a clear research question central to the project?

- **Completeness:** Does the report provide evidence of a systematic approach to research? Is there evidence that the work was well planned and that the student was engaged throughout the period of assessment? Has the work been completed to a level in accordance with the assessment stage of the award or is there more that the student could have done?

- **Competence:** Does the report demonstrate competence in the use of appropriate techniques, tools or technology at a suitable level of expertise and technical depth? Did the student require or obtain ethical clearance for the work?

- **Criticism:** Does the report provide appropriate critical assessment and evaluation of the work that has been done, and the process of doing it? Does the report provide evidence of reflection in the final evaluation? Has the student demonstrated that he/she has acted upon the feedback given in Semester 1? Has the student justified decisions made throughout the project?

- **Contribution:** Does the report show that the student has made some original contribution to the topic by analysing, designing and implementing an appropriate system? Is there an argument to suggest a contribution to either industry practice or the research field?

Appendix 6: Interim Report Formative Feedback Form

EEE521 INTERIM REPORT FORMATIVE FEEDBACK FORM

Student Name:			B00
Course:	BEng Hons ☐ BSc Hons ☐		
Project Title:		Marker	1st ☐ 2nd ☐

Range	Class	Descriptors	Overall Classification
80 – 100	1st	'Outstanding', 'Highly Innovative', 'Novel', 'Extremely Complex', 'Original', 'Insightful'	
70 – 79	1st	'Innovative', 'Wide Range of Complexity', 'Excellent Solution'	
60 – 69	2:1	'Good Solution' but lacking in Innovation' , 'Reasonably Complex'	
50 – 59	2:2	'Limited Complexity', 'Satisfactory Solution'	
40 – 49	3rd	'Basic', 'Weak Solution', 'Lack of Knowledge'	
0 – 39	Fail	'Poor', 'Failure to Implement Solution'	

Sections	Feedback Comments
Introduction [1]	
Analysis[2]	
Layout, Structure and Presentation[3]	
TurnItIn Similarity Report [4] Similarity results obtained: Internet Sources: Publications: Student Papers:	
Final Agreed Classification with Second Marker [Note: Clarify how an agreed class was achieved]	
General Feedback Comments	
Signature Supervisor:	**Date:**
Signature Second Marker:	

Appendix 7: Interim Report Submission Guidelines

The Interim Report should be presented using the structure and content outlined in the report template for your subject area.

Each section should begin on a separate page and you should ensure that you follow the correct template.

Length of Interim Report: **20 pages** of text plus appendices and references

Submission: **1 electronic copy** submitted to Blackboard Learn

Formatting Guidelines:

- Type Font for main text: **Arial or Times New Roman**
- Font size: **12 point**
- Font colour: **Black**
- Alignment: **Justified, single column**
- Line Spacing: **1.5 lines**
- Margins: **1 inch** top and bottom of pages
    - 1.5 inches at the binding margin
- Page numbering: in bottom centre of each page
- Header identical as the template provided for your subject area

Sections and Subsections:

- Divide your report into clearly defined and numbered sections.
- Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc.
- The Abstract is not included in section numbering.
- Use this numbering also for internal cross-referencing: do not just refer to 'the text'.
- Any subsection may be given a brief heading.
- Each heading should appear on its own separate line.

Figures and Tables:

- Figures and tables must be numbered using the appropriate tool within MS Word to respect the logical structure of the document.
- Number the figures and tables separately (list of figures, list of tables) in accordance with their appearance in the text.
- Each figure and each table must have a meaningful caption (on the top for tables, on the bottom for figures). Each caption ends with a point.
- Each figure and table must be referenced as well in the text, as a means to illustrate and complement what is described in the text.

- The figures and tables should be centred and respect the layout that is imposed by the document. There is no need of a fancy layout with some text on the side of a figure: it is not a magazine. However, you may group several figures in a panel.
- A list of figures and a list of tables must be present at the beginning of the document after the table of contents.

Equations and Algorithms:

- Each acronym, variable, and constant must be properly defined in the document.
- Ensure consistency of abbreviations throughout the document.
- For projects using a large number of variables, they may be presented in a table after the table of contents.
- Each equation should be numbered and written using the appropriate tool of MS Word. Present simple formulae in the line of normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y.
- In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp.
- Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

References:

- Ensure that every reference cited in the text is also present in the reference list (and vice versa). Each reference should include all the required fields.
- While you may find relevant information on some website (you have to provide the full URL), you must priority to books, articles found in academic journals, conference and workshop proceedings.
-

Sections for the Interim Report:

- Introduction
- Analysis
- Layout, Structure and Presentation

The Interim Report sections are worth 35% of the overall mark for the module, EEE521.

Appendix 8a: Final Report Feedback Form

EEE521 FINAL REPORT FEEDBACK FORM

Student Name:			B00
Course:	BEng Hons☐ BSc Hons☐		
Project Title:		Marker:	1st ☐ 2nd ☐

Range	Class	Descriptors	Overall Classification
80 – 100	1st	'Outstanding', 'Highly Innovative', 'Novel', 'Extremely Complex', 'Original', 'Insightful'	
70 – 79	1st	'Innovative', 'Wide Range of Complexity', 'Excellent Solution'	
60 – 69	2:1	'Good Solution but lacking in Innovation', 'Reasonably Complex'	
50 – 59	2:2	'Limited Complexity', 'Satisfactory Solution'	
40 – 49	3rd	'Basic', 'Weak Solution', 'Lack of Knowledge'	
0 – 39	Fail	'Poor', 'Failure to Implement Solution'	

Sections	Mark	Feedback Comments
Introduction (15)		
Analysis (20)		
Design (20)		
Implementation & Testing (35)		
Evaluation & Reflection (10)		
General Feedback Comments		
Total Report Mark		
Weighted Mark (0.7)		
Viva & Demo		
Total Project Mark (100%)		
Final Agreed Mark with Second Marker [Note: Clarify how an agreed mark was achieved]		
TurnItIn Similarity Report Result		
Signature Supervisor:		**Date:**
Signature Second Marker:		

Appendix 8b: Final Report Feedback Form (Engineering)

EEE521 FINAL REPORT FEEDBACK FORM (ENGINEERING ONLY)

Student Name:			B00
Course:	BEng Hons☐ BSc Hons☐		
Project Title:		Marker:	1st ☐ 2nd ☐

Range	Class	Descriptors	Overall Classification
80 – 100	1st	'Outstanding', 'Highly Innovative', 'Novel', 'Extremely Complex', 'Original', 'Insightful'	
70 – 79	1st	'Innovative', 'Wide Range of Complexity', 'Excellent Solution'	
60 – 69	2:1	'Good Solution but lacking in Innovation', 'Reasonably Complex'	
50 – 59	2:2	'Limited Complexity', 'Satisfactory Solution'	
40 – 49	3rd	'Basic', 'Weak Solution', 'Lack of Knowledge'	
0 – 39	Fail	'Poor', 'Failure to Implement Solution'	

Sections	Mark	Feedback Comments
Introduction (15)		
Background / Analysis / Lit Review (20)		
Industrial Design / Methodology (20)		
Design Development / Implementation & Testing (35)		
Evaluation & Reflection (10)		
General Feedback Comments		
Total Report Mark		
Weighted Mark (0.7)		
Viva & Demo		
Total Project Mark (100%)		
Final Agreed Mark with Second Marker [Note: Clarify how an agreed mark was achieved]		
TurnItIn Similarity Report Result		
Signature Supervisor:		**Date:**
Signature Second Marker:		

Appendix 9: Final Report Submission Guidelines

The Final Report should be presented using the structure and content outlined in the report template for your subject area. Each section should begin on a separate page and you should ensure that you follow the correct template.

Length of Final Report: **50 pages** of text plus appendices and references

Submission: **Two spiral bound copies** of the report should be submitted to the School Office, typed on A4 size white paper using an inkjet or laser quality printer.

1 electronic copy submitted to Blackboard Learn

Formatting Guidelines:

- Type Font for main text: **Arial or Times New Roman**
- Font size: **12 point**
- Font colour: **Black**
- Alignment: **Justified, single column**
- Line Spacing: **1.5 lines**
- Margins: **1 inch** top and bottom of pages
    - 1.5 inches at the binding margin
- Page numbering: in bottom centre of each page
- Header identical as the template provided for your subject area

Sections and Subsections:

- Divide your report into clearly defined and numbered sections.
- Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc.
- The Abstract is not included in section numbering.
- Use this numbering also for internal cross-referencing: do not just refer to 'the text'.
- Any subsection may be given a brief heading.
- Each heading should appear on its own separate line.

Figures and Tables:

- Figures and tables must be numbered using the appropriate tool within MS Word to respect the logical structure of the document.
- Number the figures and tables separately (list of figures, list of tables) in accordance with their appearance in the text.
- Each figure and each table must have a meaningful caption (on the top for tables, on the bottom for figures). Each caption ends with a point.

- Each figure and table must be referenced as well in the text, as a means to illustrate and complement what is described in the text.
- The figures and tables should be centred and respect the layout that is imposed by the document. There is no need of a fancy layout with some text on the side of a figure: it is not a magazine. However, you may group several figures in a panel.
- A list of figures and a list of tables must be present at the beginning of the document after the table of contents.

Equations and Algorithms:

- Each acronym, variable, and constant must be properly defined in the document.
- Ensure consistency of abbreviations throughout the document.
- For projects using a large number of variables, they may be presented in a table after the table of contents.
- Each equation should be numbered and written using the appropriate tool of MS Word. Present simple formulae in the line of normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y.
- In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp.
- Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

References:

- Ensure that every reference cited in the text is also present in the reference list (and vice versa). Each reference should include all the required fields.
- While you may find relevant information on some website (you have to provide the full URL), you must priority to books, articles found in academic journals, conference and workshop proceedings.

Sections for the Final Report:

- Introduction
- Analysis
- Design
- Implementation and Testing
- Evaluation and Reflection

Appendix 10: Viva and Demo Feedback Form

EEE521 VIVA AND DEMO FEEDBACK FORM

Student Name:		Banner Number:	B00
Course:	BEng Hons ☐ BSc Hons ☐		
Project Title:		Marker:	1st ☐ 2nd ☐

Range	Class	Descriptors	Overall Classification
24 - 30	1st	'Outstanding', 'Highly Innovative', 'Novel', 'Extremely Complex', 'Original', 'Insightful'	
21 - 23	1st	'Innovative', 'Wide Range of Complexity', 'Excellent Solution'	
18 - 20	2:1	'Good Solution but lacking in Innovation' , 'Reasonably Complex'	
15 - 17	2:2	'Limited Complexity', 'Satisfactory Solution'	
12 - 14	3rd	'Basic', 'Weak Solution', 'Lack of Knowledge'	
0 - 11	Fail	'Poor', 'Failure to Implement Solution'	

Sections	6 Outstanding	5 Excellent	4 Very Good	3 Satisfactory	2 Borderline	1/ Fail 0/Absent	Feedback Comments
Elevator Pitch							
Implementation Level of project complexity							
Level of project creativity, innovation & quality							
Level of completion as per specified requirements							
Understanding Technical understanding and ability to answer viva questions							
Total (30)							

General Feedback Comments	
Signature Supervisor:	**Date:**
Signature Second Marker:	

Appendix 11: Assessment Criteria

Class	Range	Introduction	Analysis	Design	Implementation & Testing	Evaluation & Reflection	Overall Presentation of Report
	Weight	**15%**	**20%**	**20%**	**35%**	**10%**	
I *[Outstanding Work]*	80 – 100	Exceptional knowledge of research-informed literature embedded in the work. Exceptional knowledge and in-depth understanding of principles and concepts. Exceptional selection of relevant and credible sources. Outstanding use of referencing and bibliography consistently and professionally applied.	A significant amount of very high quality analysis, developed independently to outline an exceptional outcome. Outstanding ability to select appropriate techniques to deliver a unique solution.	Highly innovative and original design. Outstanding ability to investigate options and uncover unique approaches to the final design decisions. Highly persuasive conclusions.	Outstanding level of application and deployment skills demonstrating a high level of expertise. Assimilation and development of cutting edge processes, tools and techniques. Implementation extends over and above the requirements.	Critical insightful evaluation and synthesis of issues and material which includes original and reflective thinking.	Report has no errors in presentation or other demonstrating exceptional attention to detail.
I *[Excellent Work]*	70 – 79	A comprehensive range of research-informed literature embedded in the work. Excellent knowledge and understanding of main concepts and key theories. Clear awareness of challenges to established views and the limitations of the knowledge base. Excellent selection of relevant and credible sources. High level referencing skills, consistently applied.	Thoroughly logical work, supported by high quality evidence. A high level of analysis, developed independently to outline an effective outcome. Excellent ability to select appropriate techniques to deliver an excellent solution.	An innovative design demonstrating the ability to solve a highly complex problem. Excellent ability to investigate existing options and justify the rationale for final design decisions. Strong persuasive conclusions.	Application and deployment extend beyond established conventions demonstrating expertise in the use of the tools. Advanced application of a range of methods, materials, tools and/or techniques to meet all of the requirements. Innovation and creativity evident throughout.	Extensive critical evaluation and synthesis of issues and material which includes some originality and reflective thinking. Strong and justifiable recommendations.	Report has minor errors in presentation or other demonstrating excellent attention to detail.
II (i) *[Good Quality Work]*	60 – 69	A wide range of research-informed literature, including sources retrieved independently. Knowledge is extensive. Exhibits understanding of the breadth and depth of established views. Selection of relevant sources. Good referencing and bibliography although some minor errors found in the technique.	Sound, logical, analytical thinking. Demonstrates the ability to select appropriate techniques, to create a suitable set of requirements.	A very good design, with some innovation evident. Demonstrates the ability to investigate established options and use these to make appropriate design decisions. Sound conclusions made to justify decisions.	Very good application and deployment skills demonstrating competence in the use of a range of methods, materials, tools and/or techniques. Evidence of some innovation and creativity.	Evidence of the ability to evaluate and devise a persuasive argument. Evidence of reflection upon the learning experience with significant evidence to support the narrative. Ability to communicate ideas and evidence accurately.	Report has a few errors in presentation or other (max 10 in whole report).
II (ii) *[Acceptable Work]*	50 - 59	A range of research-informed literature, mainly recommended sources. Knowledge is accurate with a good understanding of the key principles and concepts in the relation to the field of study. Satisfactory use of referencing and bibliography although some references missing.	Evidence of some logical, analytical thinking and synthesis. Demonstrates the ability to select appropriate techniques without guidance, to create an acceptable and useful set of requirements.	An acceptable design. Provides an accurate description of the main issues involved in the design decisions. Provides knowledge of existing options and attempts to replicate established design patterns.	Demonstrates acceptable and appropriate application of standard methods, materials, tools and/or techniques. Flaws exist in the implementation and there is inadequate coverage of the original specification.	Evaluation and reflection are evident and both satisfactory. Valid conclusions made and recommendations, where relevant.	Report has a number of errors in presentation or other (max 20 in whole report).
III *[Adequate Work]*	40 – 49	References to a limited range of mostly directed reading. Evidence of basic knowledge and understanding of the relevant concepts and underlying principles. Limited use of referencing skills.	Evidence of an attempt at analytical thinking. Some evidence of the use of established techniques to create some requirements, but weaknesses exist.	A basic design. Provides a basic description of the design decisions but evidence of a lack the knowledge.	A basic application of standard methods, materials, tools and/or techniques. A reasonable attempt at a solution but there is only a basic appreciation of the context of the application.	Minimal evaluation and reflection are evident. Some relevant conclusions and recommendations, where relevant.	Report has lots of errors in presentation or other.
Fail *[Limited Work]*	35 – 39	Poor evidence of reading and omission of relevant material. Poor referencing and bibliography skills.	Poor evidence of analysis and/or a lack of suitable requirements.	Limited and/or superficial knowledge of key principles and concepts.	A poor attempt at a solution.	Weak evaluation and reflection.	Report has lots of errors in presentation or other.
Fail	0 – 34	Insufficient and largely irrelevant material.	A lack of evidence of analysis and/or a lack of suitable requirements.	Insufficient evidence of key principles and concepts.	Failure to implement a solution.	Lack of evaluation and reflection.	Unacceptable report.